



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/680,345	10/05/2000	David W. Baarman	3086/1230 (BH 2068)	7831

27879 7590 02/06/2002
BRINKS HOFER GILSON & LIONE
ONE INDIANA SQUARE, SUITE 2425
INDIANAPOLIS, IN 46204

EXAMINER

CUEVAS, PEDRO J

ART UNIT	PAPER NUMBER
2834	

DATE MAILED: 02/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/680,345

Applicant(s)

BAARMAN ET AL.

Examiner

Pedro J. Cuevas

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-52 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-52 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 October 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3,4,6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Hydro-Power Generation System For A Water Treatment System And Method Of Supplying Electricity Using A Flow Of Fluid.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 4, 6-8 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,740,711 to Sato et al.

Sato et al. clearly teaches the construction of a hydro-power generation system, comprising:

a housing (15) that includes an inlet (11) and an outlet (16);

a rotor (12) rotatably positioned within the housing such that the rotor is rotated by a flow of fluid through the housing; and

a stator (13) fixedly positioned to surround the rotor such that rotation of the rotor induces the production of electricity.

4. With regards to claim 4, Sato et al. discloses a hydro-power generation system, wherein the rotor comprises a shaft and a turbine rotor as shown in Figure 1.

5. With regards to claim 6, Sato et al. discloses a hydro-power generation system, wherein the turbine rotor includes a plurality of vanes as shown in Figure 1.

6. With regards to claim 7, Sato et al. discloses a hydro-power generation system, wherein the stator is fixedly positioned to surround the housing adjacent the rotor as shown in Figure 1.
7. With regards to claim 8, Sato et al. discloses a hydro-power generation system, wherein the stator is fixedly positioned within the housing to surround the rotor as shown in Figure 1.
8. With regards to claim 16, Sato et al. discloses a hydro-power generation system, wherein the hydro-power generation system is formed without flux concentrators as flux concentrators are not shown in any of Sato et al. figures.
9. Claims 19-21, 24-25, 28-31, 36-37 and 41 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,731,545 to Lerner et al.

Lerner et al. clearly teaches the construction of a hydro-power generation system comprising:

- a housing (10) having an airspace (38) therein;
- an impeller (36) rotatably positioned within the airspace;
- a nozzle (44) fixedly positioned to penetrate the housing and provide an inlet for fluid into the housing, wherein the nozzle is operable to provide a stream of fluid that is directable at the impeller to induce the rotation of the impeller;
- an outlet (14) coupled to the housing to channel the fluid directed at the impeller out of the housing; and a generator (16) rotatably coupled to the impeller, wherein rotation of the impeller induces the generation of electricity by the generator.

10. With regards to claim 20, Lerner et al. discloses a hydro-power generation system, wherein the nozzle is operable to change the velocity of fluid flowing therethrough to subsonic speed as disclosed on lines 49-58 of column 4.
11. With regards to claim 21, Lerner et al. discloses a hydro-power generation system, wherein the generator generates alternating current as used on normal household appliances when common electric power is absent.
12. With regards to claim 24, Lerner et al. discloses a hydro-power generation system, wherein the impeller comprises a plurality of blades (37).
13. With regards to claim 25, Lerner et al. discloses a hydro-power generation system, wherein the blades comprise parabolic shaped paddles as shown in Figure 2.
14. With regards to claim 28, Lerner et al. does not discloses the use of flux concentrators.
15. With regards to claims 29-31, 36-37 and 41 Lerner et al. clearly teaches the construction of a hydro-power generation system with all the previously discussed elements, which make the method of using it as claimed in the previously referred claims inherent to one with ordinary skill in the art.
16. Claims 42-44 and 51-52 are rejected under 35 U.S.C. 102(b) as being anticipated by Lerner et al.

Lerner et al. clearly teaches the construction of a hydro-power generation system with all the previously discussed elements, which make the method of using it as claimed in the previously referred claims inherent to one with ordinary skill in the art.

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. Claims 2-3,9 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,740,711 to Sato et al. in view of U.S. Patent No. 4,246,753 to Redmond.

Sato et al. discloses the previously described hydro-power generation system.

However, it fails to disclose:

- a hydro-power generation system, further comprising a turbine nozzle, wherein the turbine nozzle directs the flow of fluid to the rotor;
- a hydro-power generation system, wherein the turbine nozzle is operable to increase the velocity of the fluid and direct the flow of fluid to achieve a predetermined angle of incidence of the fluid upon the rotor;
- a hydro-power generation system, wherein the electricity is alternating current.

Redmond teaches the construction of a hydro-power generation system, further comprising:

- a turbine nozzle (48, 50), wherein the turbine nozzle directs the flow of fluid to the rotor;
- a hydro-power generation system, wherein the turbine nozzle is operable (by fluid control box 72) to increase the velocity of the fluid and direct the

flow of fluid to achieve a predetermined angle of incidence of the fluid upon the rotor; and

- a hydro-power generation system, wherein the electricity is alternating current, which is the type of electricity used by common light bulbs (54) and other appliances as stated in line 67 of column 3.

for the purpose of providing a system for intercepting and utilizing gravitationally flowing water or fluid sewage to extract kinetic energy.

It would have been obvious to one skilled in the art at the time the invention was made to use the turbine nozzle and turbine rotor disclosed by Redmond on the hydro-power generation system disclosed by Sato et al. for the purpose of providing a system for intercepting and utilizing gravitationally flowing water or fluid sewage to extract kinetic energy.

19. With regards to claim 18, Redmond discloses the use of a fluid sewage as the working fluid for the hydro-power generation system.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the liquid from a liquid treatment system to supply the working fluid since the examiner takes Official Notice of the equivalence of fluid sewage and liquid treatment system for their use in the hydro-power generation art and the selection of any of these known equivalents to extract kinetic energy would be within the level of ordinary skill in the art.

20. Claims 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,740,711 to Sato et al. in view of U.S. Patent No. 6,011,334 to Roland.

Sato et al. discloses the previously described hydro-power generation system.

However, it fails to disclose a hydro-power generation system, wherein the turbine rotor includes a helical ridge.

Roland teaches a hydro-power generation system, wherein the turbine rotor includes a helical ridge (17 or 18) for the purpose of causing an internal moving contact to rotate.

It would have been obvious to one skilled in the art at the time the invention was made to use the helical ridge disclosed by Roland on the hydro-power generation system disclosed by Sato et al. for the purpose of causing an internal moving contact to rotate.

21. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,740,711 to Sato et al. in view of U.S. Patent No. 4,246,753 to Redmond as applied to claims 2-3,9 and 18 above, and further in view of U.S. Patent No. 6,011,334 to Roland.

Sato et al. in view of Redmond discloses the previously described hydro-power generation system.

However, it fails to disclose a hydro-power generation system, wherein the rotor comprises a permanent magnet.

Roland teaches a hydro-power generation system, wherein the rotor comprises permanent magnets (2) for the purpose of producing a variable magnetic field, which produces an electric voltage in the induction coil.

It would have been obvious to one skilled in the art at the time the invention was made to use the permanent magnets disclosed by Roland on the hydro-power generation system disclosed by Sato et al. in view of Redmond for the purpose of producing a variable magnetic field, which produces an electric voltage in the induction coil.

22. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,740,711 to Sato et al. in view of U.S. Patent No. 4,246,753 to Redmond as applied to claims 2-3,9 and 18 above, and further in view of U.S. Patent No. 6,047,104 to Cheng.

Sato et al. in view of Redmond discloses the previously described hydro-power generation system.

However, it fails to disclose a hydro-power generation system, wherein the alternating current is rectified to provide direct current.

Cheng teaches a hydro-power generation system, wherein the alternating current is rectified to provide direct current.

It would have been obvious to one skilled in the art at the time the invention was made to use the rectifier disclosed by Cheng on the hydro-power generation system disclosed by Sato et al. in view of Redmond for the purpose of producing a direct current output.

23. Claims 12-13 and 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,740,711 to Sato et al. in view of U.S. Patent No. 6,047,104 to Cheng.

Sato et al. discloses the previously described hydro-power generation system.

However, it fails to disclose a hydro-power generation system, wherein the electricity is direct current, and the stator comprises a permanent magnet.

Cheng teaches the use of electronic circuits on DC generators, wherein the electricity generated is direct current, and the stator comprises a permanent magnet (21)

for the purpose of converting the output of high current DC motors into high voltage AC machines.

It would have been obvious to one skilled in the art at the time the invention was made to use the electronic circuits and DC generators disclosed by Cheng on the hydro-power generation system disclosed by Sato et al. for the purpose of converting the output of high current DC motors into high voltage AC machines.

24. With regards to claims 32-34, Sato et al. in view of Cheng clearly teaches the construction of a hydro-power generation system with all the previously discussed elements, which make the method of using it as claimed in the previously referred claims inherent to one with ordinary skill in the art.

25. Claims 14-15 and 38-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,740,711 to Sato et al. in view of common knowledge in the art.

Sato et al. discloses the claimed invention except for the use of a plurality of taps and switchable coils.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to add a plurality of taps and switchable coils since it was known in the art that changing the coil configuration from parallel to series or from series to parallel would in fact allow the generator to provide different voltage levels of electricity.

26. With regards to claims 38-40, Sato et al. in view of common knowledge in the art, the use of all the previously discussed and well known elements make the method of using it as claimed in the previously referred claims inherent to one with ordinary skill in the art.

27. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,740,711 to Sato et al. in view of U.S. Patent No. 3,913,399 to Sheeks.

Sato et al. discloses the previously described hydro-power generation system.

However, it fails to disclose a hydro-power generation system, wherein the rotation of the rotor is operable to provide flow-based measurements of the fluid.

Sheeks teaches the construction of a rate-of-flow meter, wherein the rotation of the rotor is operable to provide flow-based measurements of the fluid for the purpose of providing an improved turbine type of rate-of-flow meter with attached generator.

It would have been obvious to one skilled in the art at the time the invention was made to use the rate-of-flow meter disclosed by Sheeks on the hydro-power generation system disclosed by Sato et al. for the purpose of providing an improved turbine type of rate-of-flow meter with attached generator.

28. Claims 22-23 and 45-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,731,545 to Lerner et al. in view of U.S. Patent No. 6,047,104 to Cheng.

Lerner et al. discloses the previously described hydro-power generation system.

However, it fails to disclose a hydro-power generation system, wherein the alternating current is rectified to provide direct current, and the generator generates direct current.

Cheng teaches the use of electronic circuits on DC generators, wherein the alternating current is rectified to provide direct current, and the generator generates direct current for the purpose of converting the output of high current DC motors into high voltage AC machines.

It would have been obvious to one skilled in the art at the time the invention was made to use the electronic circuits, or DC generators disclosed by Cheng on the hydro-power generation system disclosed by Lerner et al. for the purpose of converting the output of high current DC motors into high voltage AC machines.

29. With regards to claims 45-50, Lerner et al. in view of Cheng clearly teaches the construction of a hydro-power generation system with all the previously discussed elements, which make the method of using it as claimed in the previously referred claims inherent to one with ordinary skill in the art.

30. Claims 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,731,545 to Lerner et al. in view of common knowledge in the art.

Lerner et al. discloses the claimed invention except for the use of a plurality of taps and switchable coils.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to add a plurality of taps and switchable coils since it was known in the art that changing the coil configuration from parallel to series or from series to parallel would in fact allow the generator to provide different voltage levels of electricity.

31. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,740,711 to Sato et al. in view of U.S. Patent No. 4,731,545 to Lerner et al.

Sato et al. discloses a method of supplying electricity using a flow of fluid, the method comprising:

providing a housing that includes an inlet and an outlet;

supplying the flow of fluid to the inlet of the housing, wherein the fluid flows through the housing to the outlet;

rotating a rotor that is positioned in the housing such that the rotor is surrounded by a stator, wherein the rotor rotates as a result of the fluid flowing through the housing; and

generating electricity with the rotor and the stator, wherein rotation of the rotor induces the generation of electricity.

However, it fails to disclose a method of supplying electricity using a flow of fluid, further comprising the act of charging an energy storage device.

Lerner et al. teaches a method of supplying electricity using a flow of fluid, further comprising the act of charging an energy storage device for the purpose of charging or re-charging a bank of batteries.

It would have been obvious to one skilled in the art at the time the invention was made to use the added step disclosed by Lerner et al. on the method of supplying electricity using a flow of fluid disclosed by Sato et al. for the purpose of charging or re-charging a bank of batteries.

Conclusion

32. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.

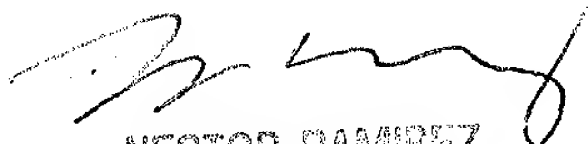
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pedro J. Cuevas whose telephone number is (703) 308-4904. The examiner can normally be reached on M-F from 8:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Néstor R. Ramírez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703)

305-1341 for regular communications and (703) 305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Pedro J. Cuevas
February 2, 2002


NESTOR RAMIREZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2300